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RESEARCH SHOWS EFFECTIVENESS OF INTEGRATED PEST MANAGEMENT

Issue:

Pesticides often are used in large quantities in urban dwellings to control cockroaches and other pests. However, these chemicals pose potential health problems to humans, especially children and expectant mothers. Research supported by the U.S. Environmental Protection Agency's Office of Research and Development has shown Integrated Pest Management (IPM) to be a safe effective way to reduce pest infestation as well as to minimize pesticide exposure, compared to standard pest control methods. IPM relies on non-chemical methods, including the cleaning of food residues, the removal of potential nutrient sources, the sealing of building cracks and crevices, and the sparing use of minimally toxic pesticides such as baits and gels.

Science Objective:

EPA-sponsored researchers investigated whether IPM techniques and education practices could reduce cockroach infestation and indoor exposure to pesticides among urban residents. Following intervention, cockroach levels declined significantly from baseline levels among households in which IPM was used. Infestations remained constant in control households. Additionally, levels of pesticides were found to be significantly lower in IPM households, but not in control households. These results show that in this study, not only did IPM lead to a reduction in infestations, but also in lowered exposure to potentially harmful chemicals.

Researchers of other EPA-sponsored studies examined the effectiveness of IPM practices in urban residences in which pregnant women lived. Previous studies had shown detectable levels of chemical pesticides in the urine of pregnant women, as well as in the blood of their newborns. Further, those newborns were found to have lowered weight and length at birth, and slower mental and motor development at age three. Cockroach infestation levels and pesticide levels in indoor air samples were both sharply reduced following intervention. Additionally, chemical levels were detectable in women from a control group, but not from the intervention group.

Application and Impact:

Based on the science of these studies and other research into IPM practices, there has been a movement toward more widespread use of IPM. New York City, for example, has enacted legislation that Integrated Pest Management be used as the preferred method of pest control in all buildings in which children spend much of the day. The Agency's research on IPM was used in support of this legislation.

This research effort also is being shared with regional risk assessors and the EPA's Office of Pesticides. The research has provided the quantitative science needed to gain acceptance in communities and enabled establishment of regional and national goals in pest management.

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